



1825 Third Street
P.O. Box 59968
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December 21, 2020

Yachun Chow
Mobile Source Control Division
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: SUBMISSION OF THE RIVERSIDE TRANSIT AGENCY'S (RTA) ZERO-EMISSION BUS (ZEB) ROLLOUT PLAN.

Mrs. Chow,

Attached you will find RTA's ZEB Rollout Plan and Resolution as required by the Innovative Clean Transit (ICT) regulation (Cal. Code Regs. tit. 13 § 2023 et seq). The ZEB Rollout Plan was unanimously approved at the RTA Board of Directors meeting on December 17, 2020.

The ZEB Rollout Plan details how RTA will transition to an all hydrogen fuel cell electric bus (FCEB) fleet. The zero-emission technology type was selected and approved by the RTA Board of Directors in November following extensive research analyzing available zero-emission technology capabilities given RTA's service area size and topography.

RTA's ZEB Rollout Plan is a living document and may be updated based on changes in vehicle technology, fleet size and operational needs. If you have any questions or require additional information, please contact me at kwarsinski@riversidetransit.com or at (951) 565-5136.

Sincerely,

DocuSigned by:

00883D6B1C01488...
Kristin Warsinski
Director of Planning

Zero-Emission Bus Rollout Plan

Section A: Transit Agency Information

Please provide the following information regarding your agency.

Riverside Transit Agency (RTA)
1825 Third Street
Riverside, CA 92517

RTA is part of South Coast Air Quality Management District (AQMD) and part of South Coast Air Basin.

Peak Vehicles: 177
Population: 2,018,724

Contact Information:
Larry Rubio
Chief Executive Officer
951-565-5000
lrubio@riversidetransit.com



RTA is not part of a Joint Zero-Emission Bus Group.

Section B: Rollout Plan General Information

1. *Does your transit agency's Rollout Plan have a goal of full transition to zero-emission technologies by 2040 that avoids early retirement of conventional transit buses?* **Yes**
2. *When did your transit agency's board or governing body approve the Rollout Plan?*
 - a. Approval date 12/17/2020
 - b. Resolution number 2020-05
 - c. *Is a copy of the board approved resolution attached to the Rollout Plan submitted to CARB?* **Yes**
3. *Contact information for follow-up on details of the Rollout Plan*
 - a. Kristin Warsinski
 - b. Director of Planning
 - c. (951) 565-5136
 - d. kwarsinski@riversidetransit.com
4. *Who created the rollout plan?* My transit agency/A consultant
 - a. *Stantec*

Section C: Technology Portfolio

What type(s) of zero-emission bus technologies (e.g. battery electric and fuel cell electric buses) does your transit agency plan to deploy through 2040?

RTA plans to deploy fuel cell electric buses (FCEBs).

Section D: Current Bus Fleet Composition and Future Bus Purchases

Please complete Table 2 regarding expected future bus purchases, including the number of buses in total expected to be purchased or leased in the year of purchase. Identify the number and percentage of ZEBs of the total bus purchases each year, as well as bus types and fuel types. Identify the same type of information for purchases of conventional buses. Bus types include standard, articulated, over-the-road, double decker, and cutaway buses. For zero-emission technologies, identify the fuel type as diesel, CNG, LNG, diesel hybrid (dHEB), gasoline hybrid (gHEB), propane, or gasoline.

- Table 2a represents the anticipated 40' buses that will be purchased in the future and Table 2b represented anticipated cutaway purchase schedule.

Table 2a: Future 40' Bus Purchases (Required)

<u>Timeline (Year)</u>	<u>Total # of Buses to Purchase</u>	<u># of ZEB Purchases</u>	<u>% of Annual ZEB Purchases</u>	<u>ZEB Bus Type(s)</u>	<u>ZEB Fuel Type(s)</u>	<u># of Conv. Bus Purchases</u>	<u>% of Annual Conv. Bus Purchases</u>	<u>Type(s) of Conv. Buses</u>	<u>Fuel Type(s) of Conv. Buses</u>
2020	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2021	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2022	70	0	0%	N/A	N/A	70	100%	70 standard	CNG
2023	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2024	20	5	25%	5 standard	FCEB	15	75%	15 standard	CNG
2025	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2026	30	15	50%	15 standard	FCEB	15	50%	15 standard	CNG
2027	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2028	17	9	53%	9 standard	FCEB	8	47%	8 standard	CNG
2029	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2030	8	8	100%	8 standard	FCEB	0	0%	N/A	N/A
2031	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2032	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2033	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2034	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2035	35	35	100%	35 standard	FCEB	0	N/A	N/A	N/A
2036	35	35	100%	35 standard	FCEB	0	N/A	N/A	N/A
2037	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2038	20	20	100%	20 standard	FCEB	0	N/A	N/A	N/A
2039	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2040	30	30	100%	30 standard	FCEB	0	N/A	N/A	N/A

Table 2a: Future Cutaway Bus Purchases (Required)

<u>Timeline (Year)</u>	<u>Total # of Buses to Purchase</u>	<u># of ZEB Purchases</u>	<u>% of Annual ZEB Purchases</u>	<u>ZEB Bus Type(s)</u>	<u>ZEB Fuel Type(s)</u>	<u># of Conv. Bus Purchases</u>	<u>% of Annual Conv. Bus Purchases</u>	<u>Type(s) of Conv. Buses</u>	<u>Fuel Type(s) of Conv. Buses</u>
2020	33	0	0%	N/A	N/A	33	100%	Cutaway	CNG
2021	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2022	27	0	0%	N/A	N/A	27	100%	Cutaway	CNG
2023	14	0	0%	N/A	N/A	14	100%	Cutaway	CNG
2024	33	0	0%	N/A	N/A	33	100%	Cutaway	CNG
2025	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2026	28	14	50%	35-ft FCEB	FCEB	14	50%	Cutaway	CNG
2027	14	7	50%	35-ft FCEB	FCEB	7	50%	Cutaway	CNG
2028	34	17	50%	35-ft FCEB	FCEB	17	50%	Cutaway	CNG
2029	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2030	13	13	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2031	6	6	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2032	16	16	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2033	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2034	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2035	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2036	14	14	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2037	8	8	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2038	17	17	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A
2039	0	0	N/A	N/A	N/A	0	N/A	N/A	N/A
2040	13	13	100%	35-ft FCEB	FCEB	0	0%	N/A	N/A

- RTA is not considering converting some conventional buses to zero-emission buses. RTA will purchase zero-emission vehicles for replacement of buses per the timeline above.

Section E: Facilities and Infrastructure Modifications

1. Please complete Table 5 with names, locations, and main functions of transit agency divisions or facilities that would be involved in deploying and maintaining zero-emission buses. Please limit the facilities to bus yards and facilities with maintenance, fueling, and charging functions, and exclude other operational functions like training centers, information and trip planning offices, and administrative buildings.

- RTA will have some modifications to its divisions to accommodate the transition to zero-emission. Below is a table of facilities and infrastructure modifications.

Table 5: Facilities Information and Construction Timeline (Required)

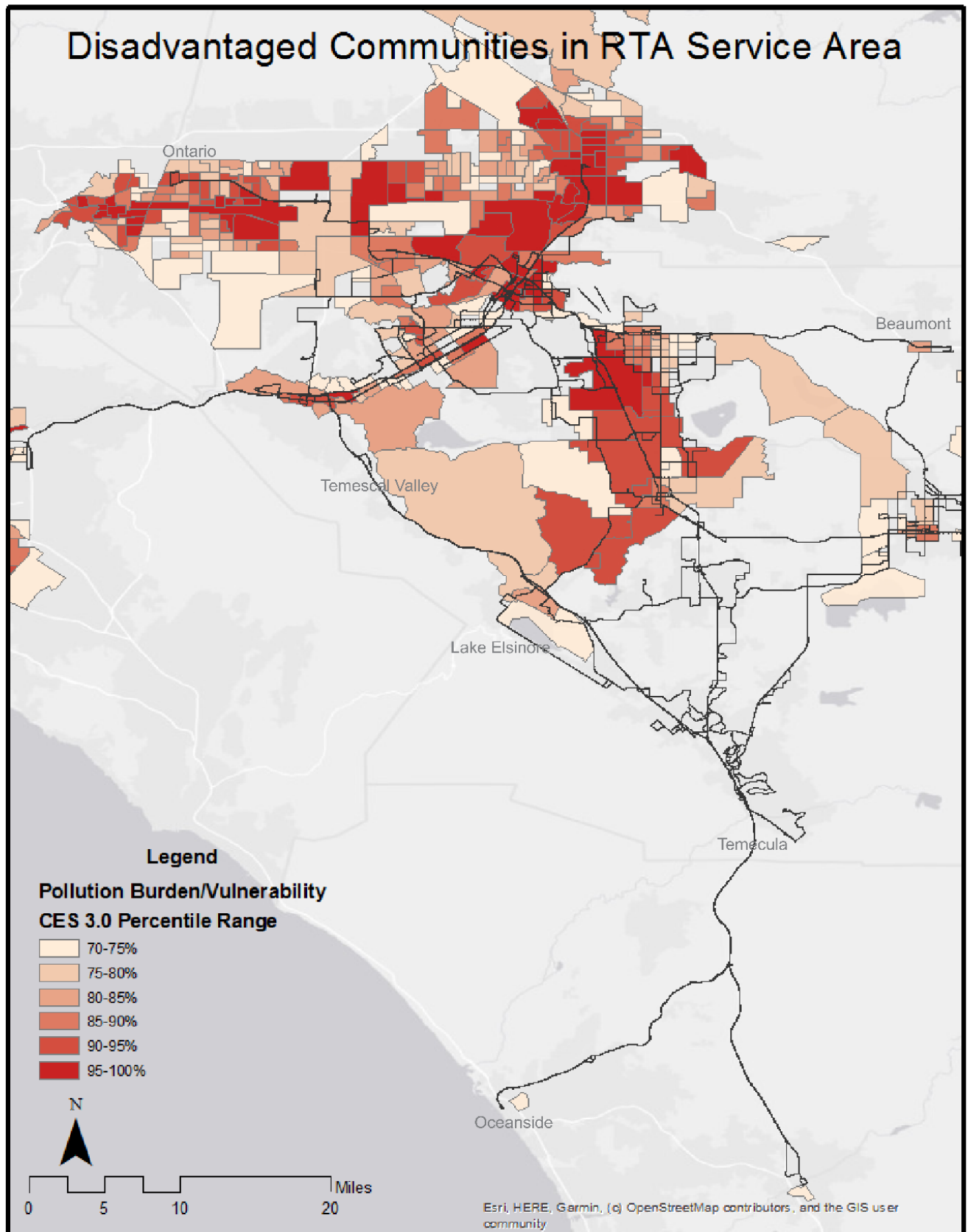
<u>Division/ Facility Name</u>	<u>Address</u>	<u>Main Function(s)</u>	<u>Type(s) of Infrastructure</u>	<u>Service Capacity</u>	<u>Needs Upgrade? (Yes/No)</u>	<u>Estimated Construction Timeline</u>
Hemet (aka Division 2)	700 Scaramella Circle, Hemet, CA 92545	Bus Operations & Maintenance, Training	New hydrogen fueling yard & dispensers, new gas detection system and site improvements.	33 std, 40' CNG buses	Yes	Beginning in 2024, ending in 2026 before first FCEB acquisition
Riverside (aka Division 1)	1825 3 rd Street, Riverside, CA 92507	Admin, Bus Operations & Maintenance, Facilities Maint.	New hydrogen fueling yard & dispensers, new gas detection system, expanded maintenance building, and site improvements	112 std, 40' CNG buses	Yes	Beginning in 2026, ending in 2028 before first FCEB acquisition

6. Electric utilities in RTA's service area are Southern California Edison (SCE) and Riverside Public Utilities (RPU).

Section F: Providing Service in Disadvantaged Communities

1. RTA does serve one or more disadvantaged communities as listed in the latest version of CalEnviroScreen.

The figure below shows that large portions of RTA's service area are defined as disadvantaged communities under the CalEnviroScreen definition. Analysis shows that all RTA routes touch at least one disadvantaged community except routes 23, 24, 40, 55, and 202. Because 100% of routes operating out of the Riverside and Hemet divisions touch at least one disadvantaged community, deployment and procurement of ZEBs at either of these facilities will fulfill ZEB deployment in disadvantaged communities. RTA will begin to deploy ZEBs in disadvantaged communities beginning in 2026 with the first ZEB deployments out of the Hemet Division, and then in 2026 when ZEBs are first deployed at the Riverside Division.



Section G: Workforce Training

Describe your transit agency's plan and schedule for the training of bus operators and maintenance and repair staff on zero-emission bus technologies. (Required)

The table below provides a high-level overview of RTA's plan and schedule for the training of bus operators and maintenance and repair staff on ZEB technologies.

Timeline (year)	Operator Training	Maintenance/Technician Training	Other Training
FY2026	Drive training (Hemet) Overall vehicle/system orientation (Hemet)	Hydrogen system training (Hemet) Hydrogen fuel system training (Hemet) Hydrogen detection and fire suppression system training (Hemet) Hydrogen cooling system package training (Hemet)	Agencywide orientation to new vehicle technology Local fire and emergency response department introduction to new technology (Hemet)
FY2027	Annual refreshers	Annual refreshers	No activity
FY2028	Drive training (Riverside) Overall vehicle/system orientation (Riverside)	Hydrogen system training (Riverside) Hydrogen fuel system training (Riverside) Hydrogen detection and fire suppression system training (Riverside) Hydrogen cooling system package training (Riverside)	Local fire and emergency response department introduction to new technology (Riverside)
FY2029	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Hemet)
FY2030	Annual refreshers	Annual refreshers	No activity
FY2031	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Riverside)
FY2032	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Hemet)
FY2033	Annual refreshers	Annual refreshers	No activity
FY2034	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Riverside)

Timeline (year)	Operator Training	Maintenance/Technician Training	Other Training
FY2035	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Hemet)
FY2036	Annual refreshers	Annual refreshers	No activity
FY2037	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Riverside)
FY2038	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Hemet)
FY2039	Annual refreshers	Annual refreshers	No activity
FY2040	Annual refreshers	Annual refreshers	Local fire and emergency response department introduction to new technology (Riverside)

Section H: Potential Funding Sources

Please identify all potential funding sources your transit agency expects to use to acquire zero-emission technologies (both vehicles and infrastructure).

The table below shows all potential funding sources RTA will explore to use to acquire zero-emission technologies.

Fund/Grant	Level of government	Description	Applicability
HVIP	State/CARB	<p>Voucher program aimed at reducing the purchase cost of zero-emission vehicles.</p> <p>A transit agency would decide on a vehicle, contact the vendor directly, and then the vendor would apply for the voucher.</p>	<p>Currently, the FY19-20 waitlist exceeds available funding.</p> <p>RTA should apply for HVIP funding as soon as possible once a ZEB plan is adopted.</p>
Low Carbon Transit Operations Program (LCTOP) and Transit and Intercity Rail Capital Program (TIRCP)	State/CARB/Caltrans	<p>5% and 10% of the annual Cap and Trade auction proceeds fund these programs.</p> <p>These programs fund projects that support new or expanded bus and rail services, improve multimodal facilities and can include equipment, fueling, maintenance and other costs.</p>	<p>RTA is already recipient of these funds and can use these funds to purchase ZEBs and related equipment. RTA currently uses this program to fund operating and free fares.</p>

Fund/Grant	Level of government	Description	Applicability
Low Carbon Fuel Standard (LCFS credits)	NA	LCFS credits are not necessary funding to be applied for; rather, they are offset credits that are traded (through a broker) to reduce operating costs.	Once ZEBs are acquired and operating, RTA can collect LCFS and 'sell' them to reduce operating costs of ZEBs. AVTA reports that by selling carbon credits, their ZEB fleet <i>earns</i> about 30¢ for every mile of operation.
Carl Moyer and AB 923	State/CARB	Funding to help procure low-emission vehicles and equipment. Transit buses are eligible for up to \$80,000 funding.	As a fleet larger than 10 vehicles, RTA would be eligible for \$80,000 or 50% of the vehicle cost (whichever is lower).
AB 617	State/CARB	Community Air Grants constitutes CARB's overall effort to implement AB 617, providing \$250 million in FY17-18 and \$245 million additional in FY18-19. This funding can be used for engine replacement, repower, and infrastructure.	RTA should monitor this fund and apply when ready. Can be used to purchase infrastructure like hydrogen fueling, etc. Since RTA will likely acquire new ZEBs, AB 617 will not offset the capital purchase cost of ZEBs.
SB 350	State/California Energy Commission	Clean Energy and Pollution Reduction Act will enable transformation of energy production to zero-emission. Primarily provides funding to public utilities to reduce GHG emissions. Also supports transportation electrification by providing rebates of up to 50% of the electric vehicle supply equipment (chargers, etc.) for transit fleets.	RTA should apply for this funding as soon as a ZEB plan is adopted to acquire necessary infrastructure.
SB1 State of Good Repair	State/Caltrans	SGR funds are competitive funds eligible for transit maintenance, rehabs, and capital programs.	RTA should apply for this funding opportunity as soon as a ZEB plan is adopted to acquire necessary infrastructure.
Low or No Emission Program (Low-No Program)	Federal/FTA	Low-No provides competitive funding for the procurement of low or no emission vehicles, including the leasing or purchasing of vehicles and related supporting infrastructure. FY20 application closes March 17, 2020, but this has been an annual program for the FTA (under the FAST Act). In FY19, ~\$85 million was available. This is a stipulation for a local match.	Based on federal budget adoption of a new transportation appropriations bill, it's likely a similar program will continue. RTA should apply for this program as soon as a ZEB plan is adopted.

Fund/Grant	Level of government	Description	Applicability
BUILD	Federal/USDOT	Formerly TIGER, BUILD aims to support investment in infrastructure. A local match is required.	RTA should apply for these grants as soon as a ZEB plan is adopted.
Buses and Bus Facilities Program (5339)	Federal/FTA	Grants applicable to rehabbing buses, purchase new buses, and invest and renovate related equipment and facilities for low or no emission vehicles or facilities. For FY20, FTA announced ~\$455 million in competitive grant funding. Requires a 20% local match. The deadline for FY20 funding is March 30, 2020.	The JPA in Merced County ("The Bus") was awarded \$2 million for ZEB electric buses and associated charging equipment in FY19. RTA should apply for these grants as soon as a ZEB plan is adopted.
TIGGER (Transit Investments for Greenhouse Gas and Energy Reduction)	Federal/FTA	Provides \$225 million for capital investments that would reduce greenhouse gas emissions and/or lower the energy use of public transportation systems. Projects can be funded at up to 100% Federal share; however, the local share ratio described in the project proposal must be maintained in the grant application.	Beyond the NFCBP, FTA has funded fuel cell bus research at several universities and transit agencies across the country as well as ZEB purchases at several transit agencies. Most of these buses were BEBs; however, Sunline and Flint MTA received funding for FCEBs. RTA should apply for these grants as soon as a ZEB plan is adopted.

Appendix

RTA Board of Directors Resolution

RESOLUTION No. 2020-05

RESOLUTION OF THE BOARD OF DIRECTORS OF THE
RIVERSIDE TRANSIT AGENCY AUTHORIZING THE
SUBMISSION OF THE ZERO-EMISSION BUS (ZEB)
ROLLOUT PLAN TO THE CALIFORNIA AIR RESOURCES
BOARD (CARB) AS REQUIRED BY THE INNOVATIVE
CLEAN TRANSIT (ICT) REGULATION.

WHEREAS, in 2018, CARB adopted the ICT Regulation, which requires public transit agencies to gradually transition to a 100 percent ZEB fleet with a goal for full transition by 2040.

WHEREAS, the main provisions of the ICT regulation include:

- Transit agencies which operate at least 100 buses in annual maximum service in an urbanized area with a population of at least 200,000, or 65 buses in the South Coast or San Joaquin Valley Air Basins, are required to submit a Board approved ZEB Rollout Plan by July 1, 2020.
- Large Transit agencies must purchase a minimum number of ZEBs during future procurements, according to the following schedule:
 - Starting in 2023, 25 percent of new bus purchases must be ZEBs (applies to 40-foot buses only),
 - Starting in 2026, 50 percent of all new bus purchases must be ZEBs (40-foot, 60-foot, and smaller "cutaway" buses typically used for paratransit service),
 - Starting in 2029, 100 percent of all new bus purchases must be ZEBs.
- Transit agencies can earn credits to offset the 2023 and 2026 ZEB purchase requirements by providing zero-emission vehicles not covered by the ICT regulation, and
- The minimum ZEB purchase requirement in 2023 and 2024 will be discharged if California transit agencies collectively purchase at least 850 ZEBs by December 31, 2020 and 1,250 ZEBs by December 31, 2021 respectively.

WHEREAS, the ICT regulation requires large transit agencies to submit a Rollout Plan to CARB by July 1, 2020, RTA received an extension to December 31, 2020 due to the COVID-19 pandemic.

WHEREAS, the Rollout Plan is a living document intended to guide the Agency's conversion to a ZEB fleet and may be updated based on changes in vehicle technology, fleet size and operating requirements.

WHEREAS, the Rollout Plan must be approved by the Agency's governing body through the adoption of a resolution prior to submission to CARB.

Resolution No. 2020-05

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WHEREAS, per the requirements of the ICT, the Rollout Plan includes required information from the following sections:

Section A: Transit Agency Information
Section B: Rollout Plan General Information
Section C: Technology Portfolio
Section D: Current Bus Fleet Composition and Future Bus Purchases
Section E: Facilities and Infrastructure Modifications
Section F: Providing Service in Disadvantaged Communities
Section G: Workforce Training
Section H: Potential Funding Sources

NOW, THEREFORE, BE IT RESOLVED that the Riverside Transit Agency Board of Directors hereby adopts the Rollout Plan as a guide for the implementation of ZEB technology and approves it for submission to CARB.

Passed and approved this 17th day of December 2020.

AGENCY BOARD DESIGNEE:

RIVERSIDE TRANSIT AGENCY

APPROVED AS TO FORM:

DocuSigned by:

Bridgette Moore

Bridgette Moore

Chair, Board of Directors

DocuSigned by:

Barbara Raileanu

Barbara Raileanu

Agency General Counsel

CERTIFICATION

The undersigned duly qualified Clerk of the Board of Directors of the Riverside Transit Agency certifies that the foregoing is a true and correct copy of a resolution, adopted at a legally convened meeting of said Board of Directors at which a quorum was present held on December 17, 2020.

ATTEST:

Joan Hepworth

Joan Hepworth

Clerk of the Board of Directors

